UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

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Orton Memorial Library of Geology
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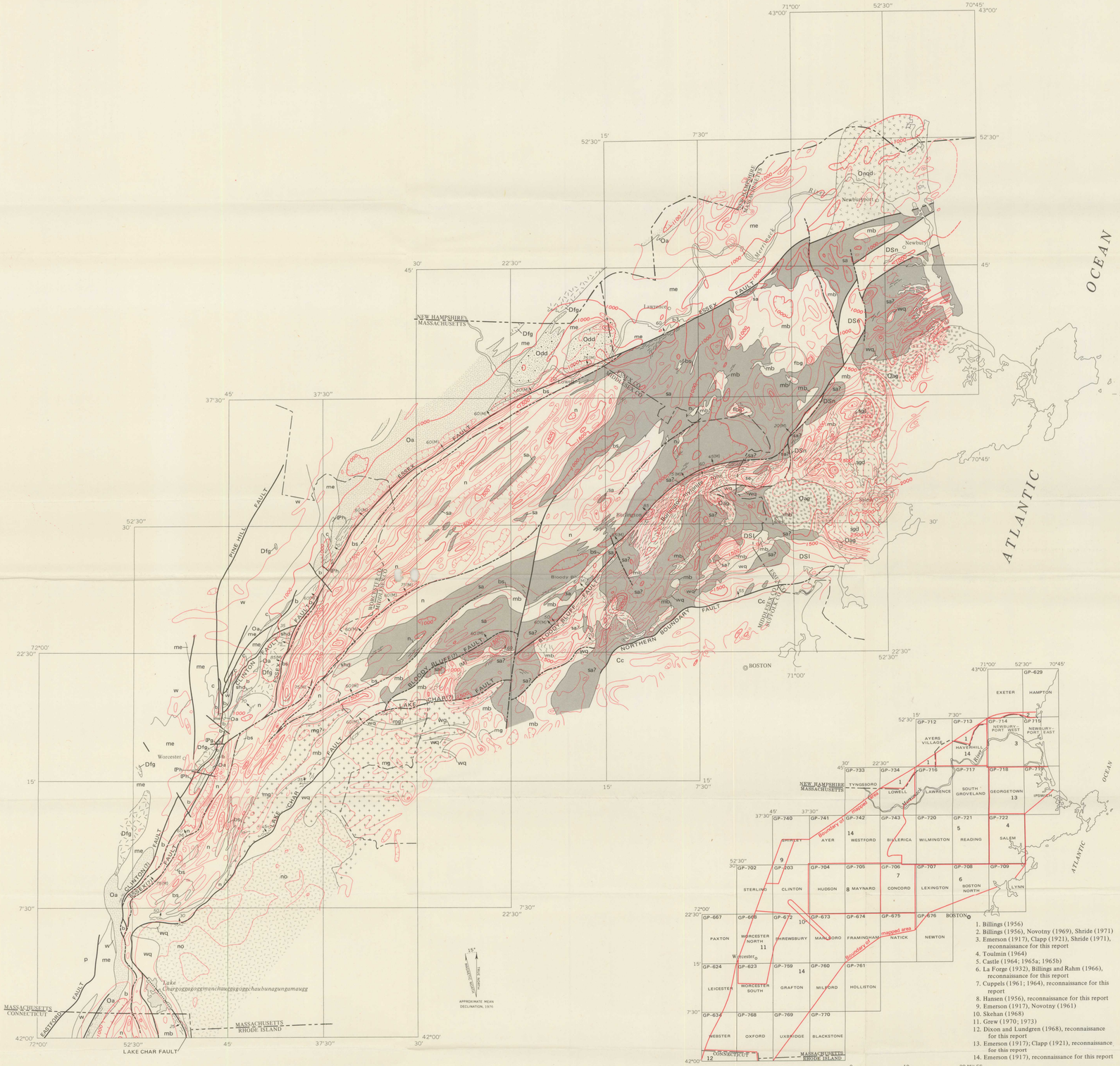
BULLETIN 1410
PLATE 1



CORRELATION OF MAP UNITS

Units	Description	Period	Era
IPg, IPh	PENNSYLVANIAN	CARBONIFEROUS	PALEOZOIC
Cc		CARBONIFEROUS	PALEOZOIC
Dfg		DEVONIAN(?)	PALEOZOIC
DSn, DSl		DEVONIAN AND SILURIAN	PALEOZOIC
Oag	"Alkalic" intrusive series of Toulmin (1964)	ORDOVICIAN	PALEOZOIC
Oa, Odd, Onqd	Unnamed plutonic series northwest of Essex fault	ORDOVICIAN	PALEOZOIC
w, me, p, c, b		ORDOVICIAN OR OLDER	PALEOZOIC OR OLDER
shd, sgd, se	Age relations unknown	ORDOVICIAN OR OLDER	PALEOZOIC OR OLDER
sa	Subalkaline intrusive series of Castle (1965a)	PRECAMBRIAN(?)	PRECAMBRIAN(?)
mg, no, n, bs		PRECAMBRIAN(?)	PRECAMBRIAN(?)
mb, wq, fbg		PRECAMBRIAN	PRECAMBRIAN

DESCRIPTION OF MAP UNITS

- **IPg** — UNIT G OF GREW (1973) (Pennsylvanian) – Chiefly carbonaceous slates and phyllites formerly included with Worcester Phyllite of Emerson (1917)
- **Cc** — CAMBRIDGE SLATE (Carboniferous)
- **IPh** — HARVARD CONGLOMERATE (Pennsylvanian)
- **Dfg** — FITCHBURG GRANITE AND ASSOCIATED ROCKS (Devonian?)
- **DSn** — NEWBURY FORMATION (Silurian and Devonian)
- **DSl** — LYNN VOLCANIC COMPLEX (Silurian and Devonian)
- **Oag** — GRANITIC ROCKS OF THE "ALKALIC" INTRUSIVE SERIES OF TOULMIN (1964) (Ordovician)
- **Oa** — AYER GRANITE (Ordovician)
- **Onqd** — NEWBURYPORT QUARTZ DIORITE (Ordovician)
- **Odd** — DRACUT DIORITE (Ordovician)
- **w** — WORCESTER PHYLLITE (Ordovician or older) – Chiefly phyllite and mica schist; equates with unit E of Grew (1973) in Worcester area
- **me** — MERRIMACK GROUP (Ordovician or older)
- **p** — PAXTON QUARTZ SCHIST (Ordovician or older)
- **c** — UNIT C OF GREW (1973) (Ordovician or older) – Chiefly quartzite; includes part of Vaughn Hills Member of Worcester Formation of Hansen (1956)
- **b** — BOYLSTON SCHIST (Ordovician or older) – Includes rocks assigned by Emerson (1917) to the Oxford Schist and Worcester Phyllite south and east of Worcester area; equates with unit B of Grew (1973) in the Worcester area
- **shd** — STRAW HOLLOW DIORITE (Ordovician or older)
- **sgd** — SALEM GABBRO-DIORITE (Ordovician or older)
- **se** — SERPENTINITE (Ordovician or older)
- **sa** — CALCALKALIC ROCKS OF THE SUBALKALINE INTRUSIVE SERIES OF CASTLE (1965) (Precambrian?) – Includes the Acton Granite, Assabet Quartz Diorite, younger subalkaline intrusive series of Toulmin (1964), and rocks assigned by Emerson (1917) to the Dedham Granodiorite, Newburyport Quartz Diorite, and Salem Gabbro-Diorite north and west of Salem and south of the Essex fault
- **mg** — MILFORD GRANITE (Precambrian?)
- **no** — NORTHBRIDGE GRANITE GNEISS (Precambrian?)
- **n** — NASHOBA FORMATION (Precambrian?)
- **bs** — BRIMFIELD-TYPE SCHIST (Precambrian?)
- **mb** — MARLBORO FORMATION (Precambrian)
- **wq** — WESTBORO QUARTZITE (Precambrian)
- **fbg** — FISH BROOK GNEISS (Precambrian)

Contact

Contact – Located or extended on basis of aeromagnetic survey

Mylonite zone, showing dip

Fault, showing dip – (M), dip calculated from magnetic data

Fault – Inferred or extended on basis of aeromagnetic survey, showing dip calculated from magnetic data

—1500— Magnetic contour – Contour interval 100 gammas. Total intensity magnetic field of the earth relative to arbitrary datum. Main magnetic field of the earth (Fabiano and Peddie, 1969) has been removed. Hachured to indicate closed areas of lower magnetic intensity; dashed where data are incomplete

1. Billings (1956)
2. Billings (1956), Novotny (1969), Shride (1971)
3. Emerson (1917), Clapp (1921), Shride (1971), reconnaissance for this report
4. Toulmin (1964)
5. Castle (1964; 1965a; 1965b)
6. La Forge (1932), Billings and Rahm (1966), reconnaissance for this report
7. Cuppels (1961; 1964), reconnaissance for this report
8. Hansen (1956), reconnaissance for this report
9. Emerson (1917), Novotny (1961)
10. Skehan (1968)
11. Grew (1970; 1973)
12. Dixon and Lundgren (1968), reconnaissance for this report
13. Emerson (1917); Clapp (1921), reconnaissance for this report
14. Emerson (1917), reconnaissance for this report

INDEX MAP SHOWING 7½-MINUTE QUADRANGLES AND 7½-MINUTE AEROMAGNETIC (GP) MAPS PUBLISHED BY THE U.S. GEOLOGICAL SURVEY AND SOURCES OF GEOLOGIC DATA

GENERALIZED GEOLOGIC AND AEROMAGNETIC INTENSITY MAP OF PART OF EASTERN MASSACHUSETTS

0 5 10 15 20 MILES
0 5 10 15 20 KILOMETRES

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